KOROVIN, Ye. P.

GELLER, S.Yu.; ZIMINA, R.P.; KEMMERIKH, A.O.; KUNIN, V.N.; KUVSHINOVA, K.V.; MURZAYEV, E.M., doktor geograf.nauk; RYAZANTSEV, S.N.; FORMOZOV, A.N.; FREYKIN, Z.G.; CHUBUKOV, L.A.; ZABIROV, R.D.; KOROVIN, Ye.P.; ROZANOV, A.N.; RODIN, L.Ye.; RUBTSOV, N.I.; SPYGINA, L.I., red. izd-va; POLENOVA, T.P., tekhn.red.

[Central Asia; its physical geography] Sredniaia Aziia; fiziko-geograficheskaia kharakteristika. Moskva, 1958. 647 p. (MIRA 11:6)

1. Akademiya nauk SSSR. Institut geografii. 2. Institut geografii Akademii nauk SSSR (for Geller, Zimina, Kemmerikh, Kunin, Kuvshinova, Murzayev, Ryazantsev, Formozov, Freykin Chubukov). 3. Akademiya nauk Kirgizskoy SSR (for Zabirov). 4. Akademiya nauk Uzbekskoy SSR (for Korovin). 5. Pochvennyy institut AN SSSR (for Rozanov). 6. Botanicheskiy institut AN SSSR (for Rodin). 7. Akademiya nauk Kazakhskoy SSR (for Rubtsov)
(Soviet Central Asia--Physical geography)

KOROVIN, Ye.P., akademik

"Salt resistance of plants" by A.A.Shakhov. Reviewed by E.P.Korovin. Uzb.biol.zhur. no.5:85-87 '58. (MIRA 12:1)

1. AN UzSSR.
(Plants, Effect of salts on) (Shakhov, A.A.)

KOROVIN, Ye.P.

"Geobotanical map of the U.S.S.R.," 1956. Biul.MOIP. Otd.biol.
63 no.2:159-161 Mr-Ap '58 (MIRA 11:7)
(PHYTOGEOGRAPHY)

KOROVIN, E. P.

"On the Significance of Biogenic Factors in the Vegetation Development of the Arid Zone." Paper presented at the Int'l Botanical Congress, Montreal, 19-29 Aug 1959.
(Tashkent, USSR)

KLYUYEV, G.A.; KOROVIN, Ye.P., akademik, otv.red.; ITSKOVSKIY, M., red. izd-va; GOR'KOVAYA, Z.P., tekhn.red.; BARTSEVA, V.P., tekhn.red.

[Cotton growing using only the natural water supply] Khlopchatnik v usloviiakh ogranichennogo vodosnabzheniia. Tashkent, Izd-vo Akad.nauk UzSSR, 1959. 148 p. (MIRA 13:3)

1. AN UzSSR (for Korovin).
(Cotton growing)

BOCHANTSEV, V.P.; BUTKOV, A.Ya.; VVEDENSKIY, A.I.; DROBOV, V.P. [deceased]; KOROVIN, Ye.P., akademik; KOROTKOVA, Ye.Ye.; KUDRYASHEV, S.N. [deceased]; LINCHEVSKIY, I.A.; MAUER, F.M.; PAZIY, V.K.; POPOV, M.G. [deceased]; RUSANOV, F.N.; SUMNEVICH, G.P. [deceased]; ZAKIROV, K.Z., glavnyy red.; MUZAFAROV, A.M., red.; CHERNYAVSKAYA, A.B., red.izd-va; SMOL'NIKOVA, B.Kh., red.izd-va; BARTSEVA, V.P., tekhn.red.

[Flora of Uzbekistan] Flora Uzbekistana. Tashkent, Izd-vo Akad. nauk Uzbekskoi SSR. Vol.4. Red.toma A.I.Vvedenskii. Sost.V.P. Bochantsev i dr. 1959. 506 p. (MIRA 13:8)

1. AN UzSSR (for Korovin, Zakirov). 2. Uzbekskaya Akademiya sel'skokhozyaystvennykh nauk (for Zakirov).
(Uzbekistan--Dicotyledons)

KOROVIN, Ye.P.

"Weeds of Turkmenistan" by V.V.Nikitin. Reviewed by E.P. Korovin. Uzb.biol.zhur. no.4:76-78 '59. (MIRA 13:1)
(Turkmenistan--Weeds) (Nikitin, V.V.)

KOROVIN, Ye.P.

A new species of the genus Ferula. Bot.mat.Gerb. 19:338-341 '59. (MIRA 12:8)

(Urgaz-Say Valley--Ferula)

OSHANIN, Lev Vasil'yevich, prof.; AZAT'YAN, Armen Arshavirovich, dots.; KOROVIN, Ye.P., doktor biolog. nauk, otv. red.; PROKHODTSEVA, S.Ya., red.; LOBANOVA, R.S., tekhn. red.

[Vasilii Fedorovich Oshanin; an outline of his life and activities] Vasilii Fedorovich Oshanin; ocherki zhizni i deiatel'nosti. Moskva, Gos. izd-vo geogr. lit-ry, 1961. 93 p. (MIRA 14:10)
(Oshanin, Vasilii Fedorovich, 1844-1917)

BONDARENKO, O.N.; BUTKOV, A.Ya.; VVEDENSKIY, A.I.; DROBOV, V.P. [deceased]; ZAKIROV, K.Z.; KOVALEVSKAYA, S.S.; LINCHEVSKIY, I.A.; NABIYEV, M.M.; PAZIY, V.K.; ROZHKOVA, O.I.; CHERNEVA, O.V.; KOROVIN, Ye.P., akad., red.; MUZAFAROV, A.M., akad., red.; EYDEL'MAN, A.S., red.; RAKHMANOVA, M.D., red.; GOR'KOVAYA, Z.P., tekhn. red.

[Flora of Uzbekistan] Flora Uzbekistana. Tashkent, Izd-vo Akad. nauk Uzbekiskoi SSR. Vol.5. 1961. 666 p. (MIRA 15:3)
(Uzbekistan--Dicotyledons)

KOROVIN, Yevgeniy Petrovich; ZAKIROV, K.Z., akademik, otv. red.; CHAYKA, G.V., red.; BARTSEVA, V.P., tekhn. red.; KARABAYEVA, Kh.U., tekhn. red.

[Vegetation of Central Asia and southern Kazakhstan] Rastitel'nost' Srednei Azii i Iuzhnogo Kazakhstana. Izd.2., dop. i perer. Tashkent, Izd-vo Akad. nauk Uzbekskoi SSR. Book 1. 1961. 452 p. (MIRA 14:10)

1. Akademiya nauk Uzbekskoy SSR i Akademiya sel'skokhozyaystvennykh nauk Uzbekskoy SSR (for Zakirov).
(Soviet Central Asia--Botany)

KOROVIN, Ye.P., akademik

"Forage resources of Kazakhstan" by L.N. Sobolev. Reviewed by E. P. Korovin. Vest.AN SSSR 31 no.3:134-137 Mr '61. (MIRA 14:3)

1. AN Uzbekskoy SSSR.
(Kazakhstan—Pastures and meadows)
(Sobolev, L.N.)

KOROVIN, Ye.P.

The phytogeographical regionalization of Central Asia. Trudy TashGU no.186:25-29 '61. (MIRA 14:12)

1. Tashkentskiy gosudarstvennyy universitet imeni Lenina.
(Soviet Central Asia--Phytogeography)

KOROVIN, Yevgeniy Petrovich; ZAKIROV, K.Z., akademik, otv. red.; KASYMOVA, I.S., red.; KARABAYEVA, Kh.U., tekhn. red.

[Vegetation of Central Asia and southern Kazakhstan]Rastitel'nost' Srednei Azii i IUzhnogo Kazakhstana. Izd.2., dop. i perer. Tashkent, Izd-vo Akad. nauk UzSSR. Book 2. 1962. 547 p. (MIRA 15:11)
1. Akademiya nauk Uzbekskoy SSR (for Zakirov).
(Soviet Central Asia—Botany)

KOROVIN, Ye.P.

New genera and species of the family Umbelliferae in Kazakhstan. Trudy Inst. bot. AN Kazakh. SSR 13:242-262 '62. (MIRA 15:12)
(Kazakhstan--Umbelliferae)

VASIL'YEVA, A.N.; GAMAYUNOVA, A.P.; GOLOSKOKOV, V.P,, kand. biol. nauk; KARMYSHEVA, N.Kh.; KOROVIN, Ye.P.; OBRAZOVA, A.; ROLDUGIN, I.I.; SEMIOTROCHEVA, N.L.; FISYUN, V.V.; PAVLOV, N.V., akademik, glav. red.; SUVOROVA, R.I., red.; ALFEROVA, P.F., tekhn. red.

[Flora of Kazakhstan] Flora Kazakhstana. Glav. red. N.V.Pavlov. Sost. A.N.Vasil'eva i dr. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR. Vol.6. 1963. 462 p. (MIRA 16:6)

1. Akademiya nauk Kazakhskoy SSR(for Pavlov).
(Kazakhstan--Botany)

KOROVIN, Ye.P.; RAYKOVA, I.A.

Advances in botany in Uzbekistan during the Soviet period.
Nauch. trudy TashGU no.241. Biol. nauki no.44:3-28 '64.
(MIRA 18:7)

ACC NR: AP7003222 SOURCE CODE: UR/0056/66/051/006/1829/1832

AUTHOR: Sokolov, A. A.; Zhukovskiy, V. Ch.; Korovin, Yu. A.

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Stimulated transitions in the radiation from a relativistic electron in an inhomogeneous magnetic field

SOURCE: Zh eksper i teor fiz, v. 51, no. 6, 1966, 1829-1832

TOPIC TAGS: relativistic electron, electron radiation, stimulated emission, axial magnetic field, maser theory, ELECTRON TRANSITION

ABSTRACT: The authors consider stimulated transitions of relativistic electrons moving in a constant but inhomogeneous magnetic field. In particular, the radiation from an electron placed in an axially symmetrical focusing magnetic field is investigated. The probability of the stimulated emission is obtained for an external electromagnetic wave which is linearly polarized and which propagates at a certain angle to the magnetic field direction. From this probability, the authors determine the power radiated by the electron in the case of resonant transitions induced by the external electromagnetic field at various harmonics, and the power of the dipole radiation. The region of variation of the harmonics, at which the stimulated emission should prevail over absorption, and is thus of interest in maser applications, is determined. Two conditions for emission are formulated in the form of inequalities relating the different parameters of the problem. Orig. art. has: 16 formulas.

SUB CODE: 20/ SUBM DATE: 15Jun66/ ORIG REF: 001/ OTH REF: 001

Card 1/1

KOROVIN, Y. I. (and L. V. Lipis)

"IMPURITIES DETERMINATION IN ZIRCONIUM AND ITS COMPOUNDS BY THE SPECTRAL METHOD".

By Y. I. Korovin and L. V. Lipis.

Report presented at 2nd UN Atoms-for-Peace Conference, Geneva, 9-13 Sept. 1958.

SOV/51-5-3-18/21

AUTHORS: Korovin, Yu.I. and Lipis, L.V.

TITLE: Use of a Hollow-Cathode Discharge for Determination of Impurities in ZrO_2. I. (Ispol'zovaniye razryada v polom katode dlya opredeleniya primesey v ZrO_2. I.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 3, pp 334-337 (USSR)

ABSTRACT: Only a few papers have been published so far on the use of a hollow-cathode discharge in spectral analysis (Refs 1-4). The hollow-cathode discharge may be conveniently employed in analysis of refractory oxides. Zirconium dioxide (ZrO_2) was used as a typical refractory oxide. The usual hollow-cathode apparatus with helium carrier gas was used (Fig 1). The discharge tube was made of quartz and was water-cooled (Fig 2). A molybdenum glass stopper carried three graphite cathodes as shown in Fig 2. The cathode dimensions are given in Fig 3. The voltage across the discharge tube was supplied from 1000 V valve rectifier. Sensitivity of the method depends on the weight of the sample; the optimum weight is 30-50 mg for the cathode dimensions given in this paper. At currents from 200-1400 mA only the strongest Zr lines are present together with the impurity lines. In analysis for alkali elements 250-300 mA currents give the best results. For the

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other elements given in the first column of the table on p 336 the optimum currents vary from 800-1200 mA. The second column of the table on p 336 gives the wavelength used in the analysis for a particular impurity; the third column gives the wavelengths of internal standards, the fourth gives the sensitivity of the method described in % and the fifth column gives the sensitivity obtainable by the evaporation method of Refs 5, 6. Figs 4, 5 and 6 give the typical calibration curves used in the analysis. The speed of the analysis is determined mainly by the rate of pumping out the discharge tube and the rest of the apparatus. One laboratory assistant can analyse 20-25 samples in one day. The comparatively long times of combustion of samples in the hollow-cathode discharge produce favourable conditions for photoelectric recording. There are 6 figures, 1 table and 9 references, 5 of which are Soviet.

SUBMITTED: September 6, 1957

Card 2/2 1. Chemical impurities--Determination 2. Zirconium oxide--Spectrographic analysis 3. Discharge tubes--Applications 4. Discharge tubes--Performance

KOROVIN, YU. I.

PHASE I BOOK EXPLOITATION SOV/5084

International Conference on the Peaceful Uses of Atomic Energy. 2d, Geneva, 1958.

Doklady sovetskikh uchenykh. [t.4] Khimiya radioelementov i radiatsionnykh prevrashcheniy (Reports of Soviet Scientists. v. 4.: Chemistry of Radioelements and Radiation Transformations) Moscow, Atomizdat, 1959. 323 p. 8,000 copies printed. (Series: Its: Trudy)

Ed. (Title page): A. P. Vinogradov, Academician; Ed.: V. I. Labaznov; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This collection of articles is intended for scientists and engineers interested in the applications of radioactive materials in science and industry.

COVERAGE: The book contains 26 separate studies concerning various aspects of the chemistry of certain radioactive elements and the processes of radiation effect on matter. These reports discuss present-day methods of reprocessing irradiated nuclear fuel, research in the chemistry of mercury, thorium, uranium, plutonium, and americium, problems related to the sorption and burying of radioactive wastes, the radiolysis of aqueous solutions and of organic compounds, the mechanism of polymer chain grafting, and the effect of radiation on natural and synthetic rubbers. V. N. Prusakov edited the present volume. Most of the reports are accompanied by references. Contributors to individual investigations are mentioned in annotations to the Table of Contents.

TABLE OF CONTENTS:

... L. V. Lipis, Y. Y. Fomin, and N. T.

Pravednikov, A. N., Ying Shang K'ang, and S. S. Medvedev. Mechanism of Polymer Chain Grafting Under the Effect of γ-Radiation (Report No. 2294) 241

Kiselkov, P. V., A. V. Fokin, Ye. V. Volkova, V. V. Kulichenko, N. I. Bogdanov, V. G. Bereskunov, and A. G. Bykov. Prospects for the Utilization of Fragmentation Radiators in Radiation Chemistry Processes (Report No. 2209) 247

Polak, L. S., A. V. Topchiyev, and N. Ya. Chernyak. Radiolysis of the Alkanes (Report No. 2524) 254

Kuz'minskiy, A. S., T. S. Nikitina, Ye. V. Zhuravskaya, L. A. Oksent'yevich, L. L. Sunitsa, and N. I. Vitushkin. Effect of Ionizing Radiation on Natural and Synthetic Rubbers (Report No. 2085) 266
[The following are mentioned for their part in certain phases of the investigations: L. I. Lyubchanskaya, N. N. Lezhnev, F. A. Galil-Ogly, T. N. Dyumayeva, and A. S. Novikov.]

Yakovlev, Yu. V., A. I. Kulak, V. A. Ryabukhin, and N. S. Rychkov. Determination by the Radioactive Analysis Method of Small Quantities of Impurities in Pure Substances (Report No. 2023) 280
[The following are mentioned as having participated in the development of analysis methods in connection with the present study: M. N. Shchelepnikov, I. P. Alimarin, V. I. Shamayev, and Professor D. I. Ryabchikov.]

Turovtseva, Z. M., and N. F. Litvinova. Determination of Gaseous Impurities in Structural and Other Materials (Report No. 2205) 297
[The following are mentioned as having developed experimental techniques and analysis methods relative to this investigation: Yu. A. Klyachko, L. L. Kunin, and Ye. M. Chistyakova (TsNIIChM - Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii - Central Scientific Research Institute of Ferrous Metallurgy); N. M. Rostotskaya and K. G. Semenyuk (GEOKhI - Institut geokhimii i analiticheskoy khimii - Institute of Geochemistry and Analytical Chemistry); and V. I. Malyshev (FIAN - Fizicheskiy institut AN SSSR - Institute of Physics AS USSR)]. 16

Korovin, Yu. I., and L. V. Lipis. Determination by the Spectral Method of Impurities in Zirconium and Its Compounds (Report No. 2137) 316
as having made a study of ...
of dyes from leuco bases: V. D. Orekhov, A. A. Zansokhova, ... Belen'kiy, T. V. Bromberg, and M. Ye. Kazanskaya.]

Bakh, N. A., V. I. Medvedovskiy, and V. V. Sarayeva. Radiolysis and Radiation Oxidation of Organic Compounds (Report No. 2295) 329
[The following are mentioned: N. S. Kolosova and V. F. Tsurikov,

(31)

KOROVIN, Yu.I.

Determination of fluorine in zirconium metal using the discharge in a hollow cathode. Zhur. anal. khim. 15 no.5:618-622 S-O '60. (MIRA 13:10)

(Fluorine--Analysis) (Zirconium--Analysis)

KOROVIN, Yu.I.

Raising determination sensitivity by means of discharge in a hollow cathode. Zhur. anal. khim. 16 no. 4:494-495 Jl-Ag '61. (MIRA 14:7)

(Chemical elements—Spectra)

S/075/63/018/001/002/010
E071/E452

AUTHORS: Vinogradov, A.V., Dronova, M.I., Korovin, Yu.I.

TITLE: Chemico-spectrographic method for the determination of admixtures in alkali metals

PERIODICAL: Zhurnal analiticheskoy khimii, v.18, no.1, 1963, 29-32

TEXT: The impurities are concentrated by extraction of 8-hydroxyquinolinates with a mixture of butyl alcohol and chloroform (1:2) from an aqueous solution of a sample at a controlled pH (6 - 7 for manganese and nickel; 4 - 5 for tantalum, niobium, tin, iron and zirconium; 2 - 3 for molybdenum and tungsten) and cupferronates (niobium, tantalum, zirconium, titanium and lead) from a 20% hydrochloric acid solution with an addition of oxalic acid. The extract is mixed with pure copper oxide, evaporated and mixed with an appropriate quantity (on copper oxide added) of cobalt chloride solution (internal standard) dried and spectrographically analysed. The sensitivity of the method at a 100% enrichment is 1 x 10^{-4} to 3 x 10^{-6}%, the accuracy 10 to 20%. The method can also be applied for the determination of other impurities (zinc, cadmium, scandium,

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Chemico-spectrographic ...

aluminium, gallium, indium, vanadium, bismuth, thorium, uranium, cerium and rare earth elements). There are 1 figure and 2 tables.

SUBMITTED: April 16, 1960

Card 2/2

S/0032/65/031/001/0045/0049

AUTHOR: Korovin, Yu. I.

TITLE: Spectral detection of chlorine and fluorine in metallic beryllium, using the discharge in a hollow cathode

SOURCE: Zavodskaya laboratoriya, v. 31, no. 1, 1965, 45-49

TOPIC TAGS: chlorine, fluorine, beryllium, spectrography/ DFS 8 spectrograph

ABSTRACT: A spectral method for simultaneous detection of chlorine and fluorine in metallic beryllium was developed. It is based on the secondary reactions of beryllium halide formation in the high-temperature regime of a discharge in a hollow cathode. The method has a sensitivity of 1×10^{-4}% and 3×10^{-4}% for F and Cl respectively, and gives an accuracy of 10% and 20%. Samples were pressed at [illegible] kg/cm^2 from vacuum distilled Be powder with additions of KCl and KF powders. The apparatus described by Yu. I. Korovin and L. V. Lipis (Optika i spektroskopiya, [illegible]) was used to photograph the spectra with spectrograph DFS-8 using a [illegible] lines/mm grating. The darkening of the BeCl and BeF bands is shown in Figs. [illegible] in the Enclosure. It was noted that the molecular BeCl and BeF line intensity increased with increasing discharge current. Within the range of 5-15

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ACCESSION NR: AP5002170

mm Hg the He pressure in the discharge zone had negligible effects. Increasing the cathode opening length increased the darkening of the lines. The curves in ΔS [illegible] were linear over the whole range of investigation. Changing [illegible] current from 300-400 ma to 800 ma increased the sensitivity from [illegible] x 10^{-5} for chlorine and from 1 x 10^{-4} to 2.3 to 10^{-5} for fluorine. To check the effects of a third component, K_2CO_3 and $MgCO_3$ were added. It was found that addition of more than 0.0[illegible]% of salts or Mg resulted in attenuation of the results (10-20% and 30% for a 0.03% K and Mg content respectively). Orig. art. has: 3 figures and 5 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 02 SUB CODE: MM, IC

[illegible] XC? OTHER: 000

[illegible] /3

Card 2/2

ENCLOSURE: 01

ACCESSION NR: AP5002170

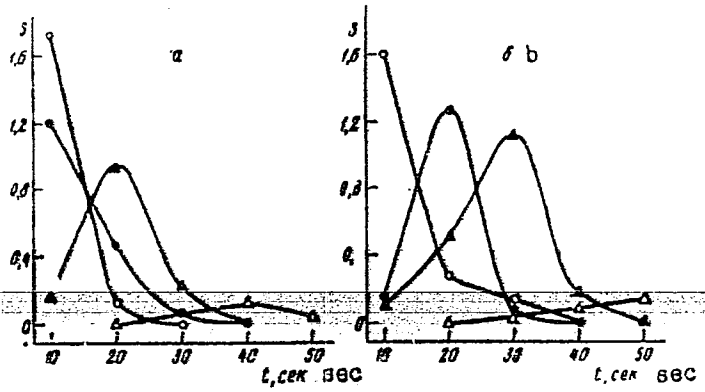

Fig. 1. Darkening of the BeCl line λ 3567.0 Å;
○ – 200 ▲ – 300, ● – 400; ○ – 500 ma; a- Be sample
b- Be + KCl (3×10^{-2} % Cl) sample

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L 27301-65

ACCESSION NR: AP5002170

ENCLOSURE: 02

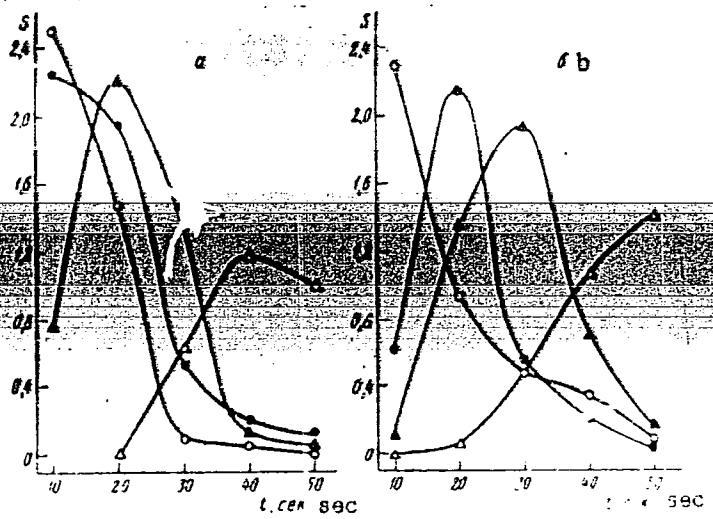

Fig. 2: BeF λ 3009.6 Å: same nomenclature as Fig. 1 with 3 x 10^{-2}% F

[illegible], and molybdenum on the determination of chromium, and of the effect of chromium, copper, and molybdenum on the determination of nickel in aluminum alloys.

Card 1/2

UDC: 543.42

ACC NR: AP6028192

It was found that the effect of chromium and nickel and the effect of copper and molybdenum are absent when they are contained in the alloy in amounts up to 2%. The mean quadratic error of a single determination of chromium and nickel, found from 25 measurements, was 4, 1.1, 1.9, and 2.7%, for concentrations of 0.05, 0.15, 0.5, and 1.0%, respectively. Thus, in the proposed fivefold measurement method, the mean quadratic error of the analysis for concentrations of approximately 0.05% was 2-3%, while for greater concentrations, it was equal to or less than 1%. Orig. art. has: 4 figures and 1 table.

SUB CODE: 07, 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 005

Card 2/2

KOROVIN, Yuriy Mikhaylovich; ULANOVSKIY, Iosif Borisovich; SHOBIK, L.Ye., inzh., ved. red.; SHREYDER, A.V., kand. tekhn. nauk, red.; SOROKINA, T.M., tekhn. red.

[Corrosion of stainless steels in the spots in contact with non-metallic materials]Korrosiia nerzhaveiushchikh stalei v mestakh kontakta s nemetallicheskimi telami. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 12 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 13. No.M-58-139/16) (MIRA 16:2)
(Steel, Stainless--Corrosion)

ULANOVSKIY, I.B.; KOROVIN, Yu.M.

Corrosion of stainless steel at the points of contact with nonmetals. Zhur. prikl. khim. 31 no.9:1366-1370 S '58. (MIRA 11:10)
(Steel, Stainless--Corrosion)

5(4), 18(7) SOV/76-33-6-38/44

AUTHORS: Ulanovskiy, I. B., Korovin, Yu. M.

TITLE: Degree of Influence of Differential Aeration and of the pH-Value on the Corrosion of Stainless Steels in Narrow Cracks (Stepen' vliyaniya differentsial'noy aeratsii i velichiny pH na korroziyu nerzhaveyushchikh staley v uzkikh zazorakh)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 6, pp 1414-1417 (USSR)

ABSTRACT: The corrosion (C) of stainless steel in sea water principally occurs in narrow cracks. It is assumed that this form of (C) is due to a differential aeration of the metal inside and outside the crack whereby a galvanic element (crack - surrounding surface) is produced (Refs 1-3). Also the amount of the H^+-ion concentration, effected in the crack by the hydrolysis products of (C), influences these galvanic elements (Refs 4, 5). The influence of the oxygen concentration and of the pH on the surface activation of the stainless steel in the crack (i.e. on the formation of the anode zone of the galvanic element) is investigated; two characteristic cases are examined - at an intense destruction of steel in the cracks, and under more stable conditions. The (C) was investigated in contact places with nonmetallic materials (rubber, plastic and plexiglass).

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SOV/76-33-6-38/44

Degree of Influence of Differential Aeration and of the pH-Value on the Corrosion of Stainless Steels in Narrow Cracks

The tests were carried out in the interval pH 2.3 - 8.3; sea water (from the Black Sea) with admixtures of HCl was used as a medium. As the steel grade 1 Kh 13 (steel with 13% Cr) is intensely corroded by sea water, this grade was investigated. The most positive electrode potential values were obtained at pH 6 - 7; an increase in pH leads to a slight shifting to more negative values, whereas a reduction of pH effects a considerable shifting to more negative values. The latter is due to a destruction of the passivation film. Tests on the simultaneous influence of oxygen and pH showed that, at a reduction of the pH, the influence of the oxygen concentration is weakened, whereas that of the pH rises. Thus, the quantity of pH is one of the principal factors determining the intensity of destruction of the metal in the crack. This was also confirmed by tests on the less corrodible steel 1Kh18N9T. There are 5 figures, 1 table, and 6 Soviet references.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva (Academy of Sciences, USSR, Institute of Physical Chemistry, Moscow)

SUBMITTED: December 27, 1957

Card 2/2

17(3), 18(3) SOV/20-125-4-62/74

AUTHORS: Rozenberg, L. A., Ulanovskiy, I. B., Korovin, Yu. M.

TITLE: The Effect of Bacteria Upon the Corrosion of Stainless Steels in Narrow Clearances (Vliyaniye bakteriy na korroziyu nerzhaveyushchikh staley v uzkikh zazorakh)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 4, pp 909-912 (USSR)

ABSTRACT: Stainless steels are in narrow clearances under the influence of seawater subjected to ... intensive corrosion (Refs 5-7). Since the effect of the bacteria is considerable (Refs 2,3) the topic mentioned in the title is interesting. The destructions are on the whole due to the effect of voltaic couples. The surface of the clearance has the effect of an anode, whereas the surrounding surface has the function of a cathode (Refs 5-7). The authors observed that the corrosion processes within the clearances are of vital importance to the bacteria. In this connection the authors investigated the development of the bacteria already while the clearance has the function of an anode as well as before the formation of a voltaic couple. Samples of stainless steels 1 Kh 13 and 1 Kh 18

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The Effect of Bacteria Upon the Corrosion of Stainless Steels in Narrow Clearances

N9T, 50 x 10 x 1 mm were tested in the laboratory, whereas other ones 240 x 180 x 4 m were tested in the Black Sea. The surface was polished, degreased by alcohol and singed over a spirit burner. The desired pH-value was obtained by the addition of HCl. The experiments were carried out with Vibrio desulfuricans, Leptothrix crassa, Pseudomonas fluorescens liquefaciens and Bac. mycoides. Moreover, an amassment of saprophytic seawater bacteria and a culture isolated from it (and as well predominating in it) - called K-1 under certain conditions - was observed. B a c t e r i a d e v e l o p i f t h e c l e a r a n c e h a s t h e f u n c t i o n o f a n a n o d e. If a voltaic couple is formed on the surface of a steel plate the surface within the clearance is anodically polarized and thus the pH-value of the electrolyte reduced. The authors explain the effect of either factor. Figure 1 shows the experimental scheme. Each experiment takes 24 hours. The effect of the anodic polarization on the development of various bacteria is approximately equal. The curves of figure 2a show that the number of bacteria is continuously reduced with rising current density, especially between 0 - 0.04 ma/cm^2. This can be explained by electrochemical phenomena (Refs 4,6). The corrosion

The Effect of Bacteria Upon the Corrosion of Stainless Steels in Narrow Clearances

products on the anode in the seawater are on the whole concentrated solutions of metal chlorides (Fe, Cr, Ni, et al., Ref 6) in the stagnation zone. Thus the pH may be considerably reduced. In the case of a pH decrease the development of bacteria is first (between pH 8.0 - 4.0) rapidly reduced, then, however, more slowly (Fig 2b). Saprophytic bacteria decrease to a considerable great extent. Thus the development of bacteria is reduced by two phenomena connected with each other: the anodic polarization and the reduction of the pH. This was confirmed by special experiments in the sea which took 8 months (Fig 3). Development of bacteria in the clearance before the formation of the voltaic couple (Table 1). Up to that moment there are no reasons to prevent the development of bacteria in the clearance. In this case the pH is equal to that of the surrounding medium. The bacteria grow therefore well. The bacteria are not washed out of the stagnant zone since a displacement in the electrolyte is in the narrow clearance only possible by diffusion. Their quantity in the clearance is therefore probable to be much greater than on the surrounding.

The Effect of Bacteria Upon the Corrosion of Stainless Steels in Narrow Clearances

surface. The development of bacteria on the latter interrupts the passivity of the steel plate, thus favoring the surface activation and the formation of a voltaic couple. There are 3 figures, 2 tables, and 7 Soviet references.

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: December 23, 1958, by V. N. Shaposhnikov, Academician

SUBMITTED: December 18, 1958

17 (4)
AUTHORS: Ulanovskiy, I. B., Tarasov, N. I., Korovin, Yu. M.

SOV/20-125-5-30/61

TITLE: The Effect of Sea-acorns Upon the Corrosion of Stainless Steels (Vliyaniye morskikh zheludey na korroziyu nerzhaveyushchikh staley)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 5, pp 1137-1140 (USSR)

ABSTRACT: The authors detected by experiments with many samples of stainless steel in the Black Sea that barnacles (Balanus improvisus and B. eburneus) as animals, which secrete chalk for building their shells, considerably, influence corrosion processes (Refs 1, 3). The base of this shell is a thin solid lime layer which sticks immediately to the steel surface. Two characteristic kinds of destruction were found among the barnacles: a) in consequence of the contact between steel and nonmetallic shell, b) by the vital action of the Balanus itself. The present paper deals only with the first kind of destruction. The experiments were made in the harbors of Batumi and Novorossiysk with two standard samples: 1Kh18 and 1Kh18N9T in a depth of 2 m. Small cut plates were sunk in

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The Effect of Sea-acorns Upon the Corrosion of Stainless Steels

SOV/20-125-5-50/61

special frames at the time of the most intense settlement of the Balanus larvae. Both steel samples were destroyed to a different extent: the sample 1Kh13 up to a depth of 1.25 mm, that means, totally within three months (Fig 1), whereas in the case of the other sample the first corrosion centers became visible only after six months. The depth of destruction amounted here to 0.14 mm after twelve months (Table 1). It was found already macroscopically that the destructions mentioned result from the activity of a galvanic cell. The steel surface acts as an anode under the base of the barnacle shell, whereas the open steel surface has the function of a cathode (Fig 2). An annular loose hydroxide surrounded the base of the shell. The destruction increases with increasing free surface (i. e. free from barnacles). The above-mentioned results were confirmed by electrochemical measurements. The participation of bacteria is possible as well. The density of the anodic current amounts to 0.15-0.20 ma/cm². Higher temperature increases the influence of barnacles. The corrosion products exercise a further activating influence. There are 3 figures, 2 tables, and 8 references, 7 of which are Soviet.

Card 2/3

The Effect of Sea-acorns Upon the Corrosion of Stainless Steels SOV/20-125-5-30/61

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: December 12, 1958, by Ye. N. Pavlovskiy, Academician

SUBMITTED: December 7, 1958

Card 3/3

BABAKOV, A.A.; ULANOVSKIY, I.B.; TUFANOV, D.G.; KOROVIN, Yu.M.

Corrosion testing of stainless steels in sea water. Trudy Inst. fiz.khim. 8:345-353 '60. (MIRA 14:4)

(Steel, Stainless—Corrosion) (Sea water)

KOPOVIN, Yu.M.; ULANOVSKIY, I.B.

Effect of oxygen andthe amount of pH on the electrode potential of stainless steels and the work of macrocouples. Trudy Inst.fiz.khim. 8:354-359 '60. (MIRA 14:4)

(Steel, Stainless--Corrosion)
(Hydrogen-ion concentration)

ULANOVSKIY, I.B.; TURPAYEVA, Ye.P.; KOROVIN, Yu.M.

Effect of balanomorpha on the corrosion of stainless and carbon steels. Trudy Inst.fiz.khim. 8:360-372 '60. (MIRA 14:4)

(Steel—Corrosion) (Marine biology)

MUROMTSEV, A.K.; ULANOVSKIY, I.B.; SHABODALOV, I.P.; KOROVIN, Yu.M.

Testing coatings for metal protection in fluctuating waterline zones.
Trudy Inst.fiz.khim. 8:387-395 '60. (MIRA 14:4)

(Protective coatings—Testing)
(Hulls (Naval architecture)—Corrosion)

18.8300

77520
SOV/80-33-1-29/49

AUTHORS: Korovin, Yu. M., Ulanovskiy, I. B.

TITLE: Effect of pH Value on the Electrode Potential of Stainless Steels

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 1, pp 167-172 (USSR)

ABSTRACT: The effect of pH value on the electrode potential of stainless steels was studied in connection with corrosion of stainless steels in sea water. The experiments were conducted in water of the Black Sea with pH values from 8.5 to 1, adjusted by addition of hydrochloric acid. Steel plates (50 x 10 x 2 mm) of different composition were used. It was shown that a decrease in pH value causes a sharp shift of electrode potentials of many stainless steels towards the negative, which leads to the formation of an intensive galvanic couple of the metal gap and surrounding surface. Study of the

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effect of Ti, Mo, Ni, and Cr on the electrode potential show that the rate of stainless steel corrosion caused by the shift of the electrode potential towards the negative as result of pH lowering can be decreased by changing the composition of the steel (addition of the above-mentioned elements). Experiments show that reducing the salinity of the sea water from 18 to 5% does not lessen the shift of electrode potential, that is, the corrosion of stainless steel. The above conclusions can be illustrated by some of the given curves (see Figs. 1, 5, and 6).

Effect of pH Value on the Electrode Potential of Stainless Steels

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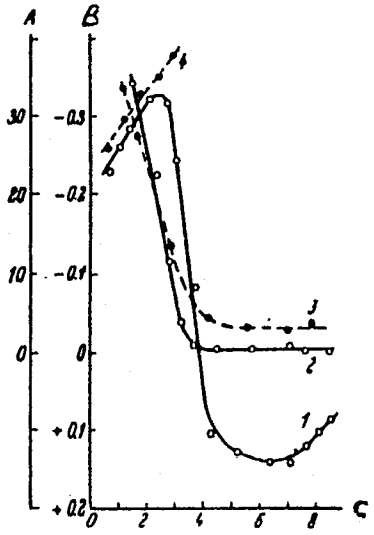
SOV/80-33-1-29/49



Card 3/6 Fig. 1. See Card 4/6 for Caption

Effect of ph Value on the Electrode Potential of Stainless Steels

77520
SOV/80-33-1-29/49

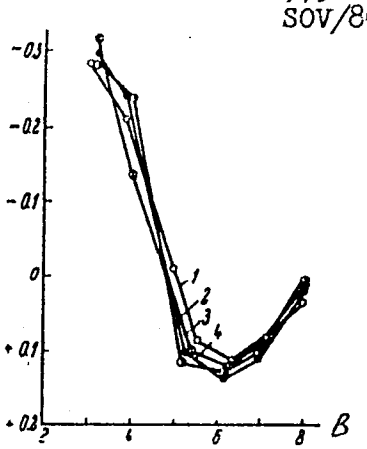


Fig. 6. Electrode potential of steel 1Kh13 at different salinity. (A) Potential (in v); (B) ph value. Salinity: (1) 18%; (2) 15%; (3) 10%; (4) 5%.

Card 6/6

Fig. 1. Electrode potential and the rate of dissolution versus pH. (A) Rate of dissolution (g/m^2 x day); (B) potential (in v); (C) pH value. (1) Electrode potential of steel 1Kh13; (2) rate of dissolution of steel 1Kh13; (3) rate of dissolution of steel 3; (4) electrode potential of steel 3.

There are 7 figures; and 8 references, 1 U.S. and 7 Soviet. The U.S. reference is: J. Everhart, Materials and Methods, 35, 5 (1952).

ASSOCIATION: Institute of Physical Chemistry of USSR Academy of Sciences (Institut fizicheskoy khimii AN SSSR)

SUBMITTED: January 19, 1959

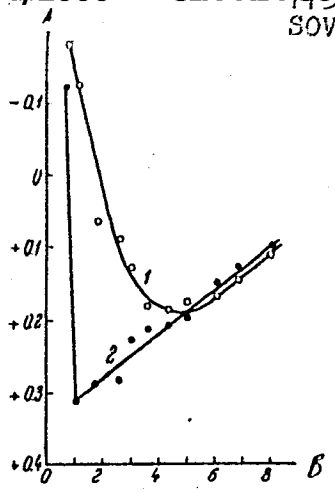


Fig. 5. Effect of Ti on electrode potential. (A) Potential (in v); (B) pH value. Steel: (1) 1Kh18N9; (2) 1Kh18N9T.

ULANOVSKIY, I.B.; TARASOV, N.I.; TURPAYEVA, Ye.P.; KOROVIN, Yu.M.

Corrosion of stainless steel due to the vital activities of acorn barnacles. Dokl.AN SSSR 132 no.4:941-944 Je '60. (MIRA 13:5)

1. Institut okeanologii Akademii nauk SSSR. Predstavlenc akademikom Ye.N. Pavlovskim i akademikom P.A.Rebinderom.
(Black Sea--Cirripedia)
(Steel, Stainless--Corrosion)

ULANOVSKIY, I.B.; ROZENBERG, L.A.; KOROVIN, Yu.M.

Influence of bacteria on the electrode potential of stainless steels in sea water. Mikrobiologiia 29 no.2:281-286 Mr-Ap '60 (MIRA 14:7)

1. Institut okeanologii AN SSSR.
(BACTERIA) (STEEL, STAINLESS)

18.8310

S/081/61/000/021/033/094
B101/B147

AUTHORS: Titov, V. A., Korovin, Yu. M.

TITLE: Effect of hydrogen absorption on the strength of steel

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 254, abstract 21I105 (Sb. "Korroziya i zashchita konstrukts. metallich. materialov", M., Mashgiz, 1961, 223 - 229)

TEXT: The authors studied the effect of the pH of the solution and the current density on the H_2 amount absorbed by У9А (U9A) steel wire samples under tension. They also studied the effect of the concentration of H_2SO_4 and that of 4М (4M) or КС (KS) corrosion inhibitors on the resistance of corrosion fatigue of steel 50 wire samples in cathodic polarization and without it. In 1% H_2SO_4, saturation with H_2 of U9A steel under static tension occurs at $D = 2a/dm^2$. With concentrations of H_2SO_4 between 0.1 and 15%, the strength of steel 50 decreases rapidly; it rises, however (in 1% H_2SO_4), with addition of 4M and KS corrosion inhibitors due to inhibition

Card 1/2

Effect of hydrogen absorption... S/081/61/000/021/033/094
B101/B147

of hydrogen absorption by the steel. 4M proved to be more efficient than KS. [Abstracter's note: Complete translation.]

VC

Card 2/2

ROZENBERG, L.A.; KOROVIN, Yu.M.; ULANOVSKIY, I.B.

Effect of bacteria on the corrosion of stainless steel. *Trudy Inst. okean.* 49:248-257 '61. (MIRA 15:1)
(Sea water--Microbiology)
(Steel, Stainless--Corrosion)

S/080/62/035/005/009/015
D205/D307

AUTHORS: Ulanovskiy, I. B., Korovin, Yu. M. and Sevast'yanov, R. F.

TITLE: Influence of hydrogen sulphide on the electrode potential of stainless steels

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 5, 1962, 1065-1070

TEXT: In previous work on this subject H_2S was regarded as a stable compound. However, H_2S is itself oxidized, giving a series of varying intermediates depending on the conditions - oxygen concentration, pH, presence of catalysts, etc. It was, therefore, of interest to study the influence of each of the intermediates on the electrode potential of stainless steel. Steels 1Х18Н9Т (1Kh18N9T) and 1Х13 (1Kh13) were investigated in Black Sea water of pH 8. The ratio of the forms of H_2S (H_2S, HS^- and S^{-2}) depends on the pH, which was varied down to the value of 2.0. The elec-

trode potential was constant in the pH range of 8.0 - 3.5. Further lowering of the pH caused a sudden drop of 0.22 V. This is explained by the disappearance of HS^- ions at pH 3.5. In the presence of 10 mg/l of O_2 the electrode potentials are more positive than in its absence. At pH 3.5, the potential is shifted by 0.55 V towards the negative side. There is no such shift in the absence of H_2S in both aerobic and anaerobic conditions. The oxidation and influence of H_2S and its oxidized forms SO_3^{-2}, $S_2O_3^{-2}$, SO_4^{-2} on the electrode potential were also studied. The largest influence was exerted by H_2S and SO_3^{-2}, both shifting the potential towards negative values. The anodic passivity which hampers the destruction of stainless steels is strongly influenced by the concentration of H_2S. While without H_2S anodic passivity takes place at a current density of 3 $\mu amp/cm^2$ at 35 mg/l of H_2S the required current density is three times higher and at 60 mg/l

Card 2/3

9 to 10 times higher. There are 7 figures.

SUBMITTED: March 13, 1961

Card 3/3

ULANOVSKIY, I.B.; TURPAYEVA, Ye.P.; KOROVIN, Yu.M.; SIMKINA, R.G.

The cirriped Balanus improvisus Darwin as a factor causing corrosion of stainless steel. Trudy Inst. okean. 49:235-241 '61.
(MIRA 15:1)
(Black Sea--Cirripedia) (Steel, Stainless--Corrosion)

UIANOVSKIY, I.B.; TURPAYEVA, Ye.P.; SIMKINA, R.G.; KOROVIN, Yu.M.

Effect of the bivalvular mollusk Mytilus galloprovincialis L. on the corrosion of steel. Trudy Inst. okean. 49:242-247 '61.
(MIRA 15:1)
(Black Sea--Lamellibranchiata) (Steel--Corrosion)

S/080/62/035/012/006/012
D217/D307

AUTHORS: Ulanovskiy, I.B., Sevast'yanov, V.F. and Korovin, Yu.I.

TITLE: Influence of hydrogen sulfide on the corrosion of carbon steel

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 12, 1962, 2674-2678

TEXT: The influence of H_2S, formed by the action of sulfate-reducing bacteria in sea water, on the corrosion of carbon steels was studied by investigating its effects on the rate of corrosion, both in the absence and in the presence of oxygen, and its corrosive action at various pH values of the corrosive solution. The effect of the mechanism of oxidation of H_2S on the rate of corrosion was also studied. It was found that corrosion increases in the absence of oxygen, even at low H_2S concentrations, owing to the promotion of the anodic reaction, but owing to the stifling of the cathode reaction, it tends to decrease with time. In the presence

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of oxygen, introduction of a small quantity of H_2S reduces the rate of corrosion owing to reduction in oxygen concentration. Corrosion is greatly accelerated under the influence of H_2S on lowering the pH to 5.0 - 4.0, owing to the drastic intensification of depolarization by hydrogen. The mechanisms of oxidation of H_2S into $S_2O_3^{--}$ and SO_4^{--} at a concentration of up to 100 mg/l exerts no influence on the intensity of corrosion. SO_3^{--} ions in the presence of oxygen markedly reduce the rate of corrosion owing to the reduction in oxygen concentration brought about by the oxidation reaction. There are 8 figures and 3 tables.

SUBMITTED: October 24, 1961

Card 2/2

L 28541-66 EWI(m)/EWP(t)/ETI IJP(c) JD/WB/GD

ACC NR: AT6013808 (N) SOURCE CODE: UR/0000/65/000/000/0351/0358

AUTHOR: Golubev, A. I.; Ulanovskiy, I. B.; Korovin, Yu. M.

47
44
B+1

ORG: none

TITLE: Corrosion of aluminum and titanium in clearance gaps

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2. Moscow, Izd-vo Metallurgiya, 1965, 351-358

TOPIC TAGS: aluminum alloy, titanium base alloy, copper containing alloy, sea water corrosion, oxygen, shipbuilding engineering/AV00 aluminum, AMg-5 Al alloy, D16 Al alloy, VT-1D Ti-Cu alloy

ABSTRACT: The article deals with the processes of the decrease in O_2 concentration in clearance gaps, the effect of O_2 and pH value on electrode potentials, and the work of macro-corrosion pairs, as investigated by a previously described method (Ulanovskiy, I. B., Korovin, Yu. M. ZhPKh, 1962, 35, 8, 1753). On Al and Ti alloys exposed to sea water the O_2 concentration in the clearance gaps sharply decreases to an insignificant level owing to the intense rate of consumption of O_2 for passivation processes in narrow gaps; in the case of Al, if this level falls below 0.5 mg O_2 per liter, the potential gets displaced by 500 mv in the negative direction, and this leads to the formation of differential-aeration pairs; the attendant hydrolysis of the anodic

Card 1/2

products of corrosion causes the pH value in the clearance gaps to diminish from 8.0 (normal value) to 3.2-3.4. This, in its turn, leads to an increase in current intensity owing to the decrease in anodic polarizability. Thus, for pure aluminum AV00, in the presence of an O_2 concentration of 0.1 mg/liter the current intensity of the differential-aeration pair is 10 μa; if, however, given the same O_2 concentration, the pH value decreases to 4.0, the current intensity of the pair increases to 18 μa. A similar pattern is observed for the Al alloys AMg-5 and D16. As for Ti, it was found that, while it did corrode to a slight extent in narrow clearance gaps, it remains as highly corrosion resistant in sea water as it is under other conditions; the reason is that during anodic polarization pH value does not decrease in the clearance gaps of Ti. Cu-treated Ti is somewhat more corrosion resistant, specimens of a Ti-Cu alloy (VT-1D) were tested for 18 months in sea water and it was found that, while some characteristic corrosion arose on the barnacle-encrusted areas, the depth of this corrosion was insignificant -- of the order of 0.01 mm; even this slight corrosion, however, can be eliminated if the use of Ti to protect the underwater part of ship's hulls against barnacles is combined with the application of ultrasonic vibrations. Orig. art. has: 5 figures and 1 table.

SUB CODE: 11, 07 / 20/ SUBM DATE: 19Jul65/ ORIG REF: 008/ OTH REF: 003

L 28543-66 EWT(m)/T/EWA(d)/EWP(t)/ETI IJP(c) JD/WB/GD

ACC NR: AT6013810 (N) SOURCE CODE: UR/0000/65/000/000/0366/0378

AUTHOR: Golubev, A. I.; Ulanovskiy, I. B.; Korovin, Yu. M.; Sevast'yanov, V. F.

ORG: none

TITLE: Effect of hydrogen sulfide on the corrosion of stainless and carbon steels

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2, Moscow, Izd-vo Metallurgiya, 1965, 366-378

TOPIC TAGS: stainless steel, carbon steel, sea water corrosion, hydrogen sulfide, hydrogen ion / 1Kh18N9T stainless steel, 1Kh13 steel, St. 3 carbon steel

ABSTRACT: H_2S in the sea is produced by sulfate-reducing bacteria which proliferate on barnacle-encrusted ship hulls and subsurface structures. In this connection, for stainless steel the effect of H_2S on electrode potential was investigated as a criterion of corrosion resistance of the steel. For carbon steel, the effect of H_2S on both the electrode potential and the self-dissolution processes was investigated. The experiments were performed in the presence of O_2 concentrations of < 0.1 and 9.0 mg/liter, variation in pH value from 8 to 2 and variation in H_2S concentration from 0 to 100 mg/liter. O_2 was removed by blowdown with N_2 extracted from air. The air, flowing via flow meter 1 (Fig. 1) and safety flask 2, entered cylinders 3-5 containing an alkali solution of pyrogallol in which it was relieved of most of its O_2. The

Card 1/4

L 28543-00

ACC NR: AT6013810

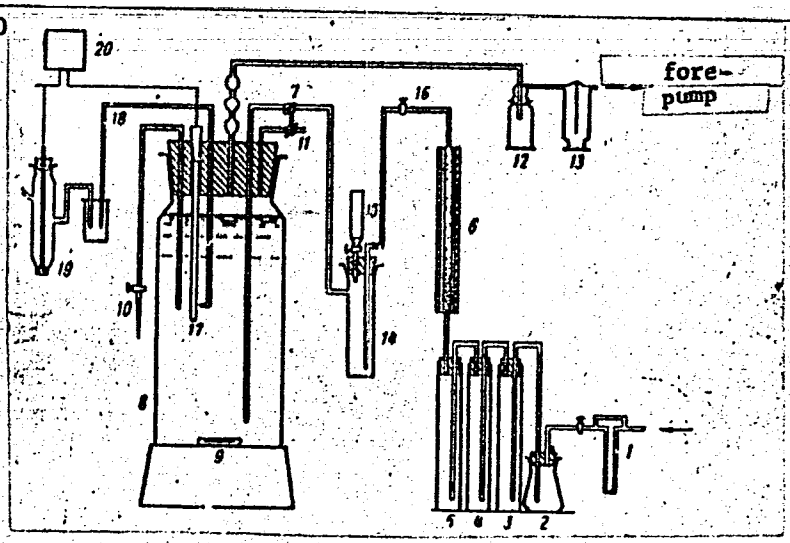

Fig. 1. Diagram of setup for investigating the effect of hydrogen sulfide on the electrode potential in the absence of oxygen:
1- flow meter; 2 - safety flask; 3, 4, 5 - absorption cylinders; 6 - tubular furnace; 7,11-three way valve; 8-test vessel; 9-magnetic stirrer; 10 - sampler; 12, 13 - safety flasks; 14 - vessel for producing H_2S; 15 - separatory funnel; 16 - two-way valve; 17 - test specimen; 18 - electrolyte; 19 - calomel electrode 20 - potentiometer

Card 2/4

L 28543-66

ACC NR: AT6013810

2

remaining O_2 was absorbed in tubular furnace 6 containing copper chips heated to 600° C. The passage of air was facilitated by rarefaction produced with the aid of a fore-pump, with the rate of air inflow being determined by flow meter 1. Pure N_2 entered vessel 8 via three way valve 7. To accelerate the process of O_2 removal, the solution was stirred with magnetic stirrer 9. The samples were collected via tube 10. H_2S was produced by reacting HCl with a titrated Na_2S solution. The electrode potentials were measured by means of the P-4 potentiometer and anodic polarization curves were plotted by the potentiostatic method on using cylindrical specimens of 1Kh18N9T/1Kh13 and St. 3 steels. The experiments were performed in Black Sea water (pH = ~8.0). 4

Findings: H_2S and the intermediate products of its oxidation definitely affect the electrode potentials and corrosion of stainless and carbon steels. Thus, as the H_2S concentration of sea water increases the electrode potential is displaced in the minus direction owing to the sharp decrease in O_2 concentration stemming from the consumption of O_2 for the oxidation of H_2S. When the pH of sea water is <5.0, the corrosion rate in the presence of H_2S gets intensified owing to the facilitation of the process of hydrogen depolarization. The presence of H_2S in sea water markedly affects the anodic passivity of stainless steel (Fig. 2). Thus, in H_2S-free water (curve 4) passive state sets in at a current density of ~3 $\mu a/cm^2$, whereas in water with 35 mg H_2S/liter the current density required to attain anodic passivity is 3 times as high; in water with 60 mg H_2S/liter, 9-10 times as high (curve 2); and in water with 80 mg H_2S/liter no passivity is observed (curve 1). Hence the higher the H_2S concen-

Card 3/4

L 28543-66
ACC NR: AT6013810

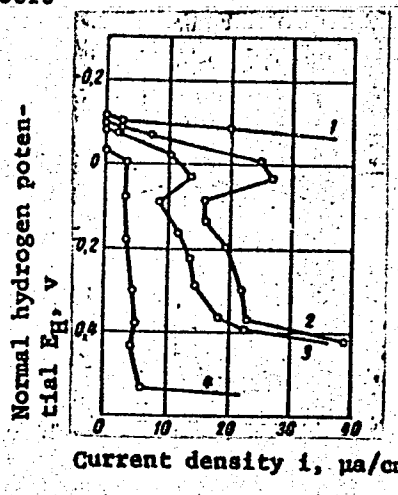

Fig. 2. Anodic polarization curves of 1Kh18N9T steel in sea water in the presence of hydrogen sulfide:
1 - 80 mg/liter H_2S; 2 - 60 mg/liter H_2S; 3 - 35 mg/liter H_2S; 4 - control experiment without H_2S

tration of sea water is -- in the absence of O_2 -- the faster the corrosion rate of steel becomes. If O_2 is present in the solution, the corrosion of carbon steel with increasing H_2S concentration initially decreases owing to the decrease in O_2 content, but later it increases. Orig. art. has: 7 figures, 1 table.

SUB CODE: 13,11/,07/, 11/ SUBM DATE: 19Jul65/ ORIG REF: 018/ OTH REF: 001

Card 4/4

S/080/62/035/008/002/009
D202/D308

AUTHORS: Ulanovskiy, I.B., and Korovin, Yu.U.

TITLE: The effect of oxygen concentration on the onset of destruction in narrow cracks

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 8, 1962, 1753-1759

TEXT: The corrosion resistance of steels, containing different amounts of Cr, Ni, Mo and Ti, to sea water has been studied. The effects of O_2 and Cl' concentration in water, that of anodic polarization of the crack surface and of crack width on the degree of corrosion has been investigated. The method employed consisted of determining the time required for the onset and destruction of passive films on the clearance surface, by plotting anodic polarization curves at different O_2 concentrations and at different pH of the sea water. It was found that O_2 favorably affects the protective film formation, while a decrease in crack width has a

The effect of oxygen concentration ...

strong unfavorable effect, as it hinders the diffusion of O_2 into the crack and increases the Cl' concentration in it. The corrosion resistance depends also on the composition of the steel; thus up to 25 % additions of Ti, Mo or Cr increase the corrosion resistance. There are 7 figures and 4 tables.

ASSOCIATION: Institut fizicheskoy khimii ANSSSR (Institute of Physical Chemistry, AS USSR)

SUBMITTED: January 27, 1961

Card 2/2

KOROVINA, A. G., GLADKIKH, S. G., DIANOVA, V. V., USTINOVA, A. P., PETROVA, N. V., SHILOVA, S. A. and TKACHENKO, N. N.

"The Epidemiology and Prophylaxis of Tick-Borne Encephalitis in Molotovskaya Oblast," an article presented at the Interoblast' Scientific-Practical Conference of Medical Workers of the Urals, Siberia, and the Far East, Krasnoyarsk, 8-12 Dec 55.

Sum. No. 1047, 31 Aug 56

USSR/Zooparasitology. Ticks and Insects in Disease Vectors. Mites. G

Abs Jour: Ref Zhur-Biol., No 17, 1958, 77035.

Author : Gladkikh, S.G.; Shilova, S.A.; Tkachenko, N.N.; Korovina, A.G.

Inst :

Title : Results of Work of Conducting Anti-Tick Prophylaxis in the Localized Region of Spring-Summer Encephalitis.

Orig Pub: Tr. Tsentr. n.-i. dezinfekts. in-ta, 1957, vyp. 10, 226-233.

Abstract: No abstract.

Card : 1/1

KOROVINA, A. G., GLAIKIKH, S. G., SHILOVA, S. A., USTINOVA, A. P., PETROVA, N. V., TKACHENKO, N. N.

"Antitick measures in the nidi of spring-summer encephalitis."

report submitted at the 13th All-Union Congress of Hygienists, Epdiemiologists and Infectionists, 1959.

KOROVINA, A. G., MINAYEV, V. M., BAROVA, N. I., STARODUBTSEVA, G. I., GREMBOVSKAYA, A. V., TKACHENKO, N. I., SHAMARIN A. A. G.

"A study of the natural foci of vernal encephalitis in the western Urals." Page 79

Desyatoye soveshchahiyepo parzitlolgicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

Perm' Inst. of Vaccines and Sera and the Oblast Sanitary-Epidemiological Station

S/137/61/000/012/142/149
A006/A101

AUTHORS: Shayevich, A. B., Perepelkina, M. A., Korovina, A. G.

TITLE: Spectrographical determination of copper and silicon in ferro-molybdenum

PERIOD: Referativnyy zhurnal, Metallurgiya, no. 12, 1961, 6, abstract 12K32 ("Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chern. metallov" 1960, no. 8, 111-112)

TEXT: The authors developed two variants of determining Cu and Si in ferro-molybdenum (I). By variant 1, powder of standard specimen I was mixed with pure Fe_2O_3 and graphite in ratios of 1 : 2 : 3; 1 : 3 : 4, 1 : 4 : 5 and 1 : 5 : 6. The samples to be analyzed are crushed until 0.071 mm size and diluted in a 1 : 4 : 5 ratio. Standard graphite electrodes are filled with the mixtures obtained. To perform the analysis, an ИСП-28(ISP-28) quartz spectrograph is used with 0,015 mm slit width. The analysis is made by the three standard method. In variant 2, a set of preliminarily analyzed standard samples is employed. The analysis conditions are analogous to variant 1, only 40 second preliminary roasting is performed additionally and the following lines are used

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Specyrographical determination ...

for photometry: Cu 2824.37 - Mo 2829.94 Å and Si 2528.51 - Mo 2578.77 Å, (without attenuator). The mean square error of the result is about 4 - 5% (relatively) as an average of 3 determinations.

L. Vorob'yeva

[Abstracter's note: Complete translation]

Card 2/2

KOROVINA, A.; STROGANOVA, L., redaktor; CHERTOVA, Zh., tekhnicheskiy redaktor.

[Moscow zoological park] Moskovskii zoopark. Moskva, Gos. izd-vo izobrazitel'nogo iskusstva (IZOGIZ), 1954. [unpaged] (MLRA 7:9)
(Moscow--Zoological gardens) (Zoological gardens--Moscow)

KOROVINA, A.M.

Survey of scientific work for productive purposes carried out at the Moscow Zoological Park. Sbor. trud. Mosk. zoop. no.1:31-50 '56.
(Moscow--Zoological gardens) (MIRA 10:11)

KOROVINA, A.M.

Feeding the roe deer. Sbor. st. Mosk. zoop. no.2:74-78 '58.
(MIRA 11:12)
(Roe deer--Feeding and feeding stuffs)

SPANDAR'YAN, V.B., red.; KUTSENKOV, A.A.; YERSHOV, Yu.A.; PIROZHKOVA, A.G.; ZINOV'YEV, N.V.; GOLOVIN, Yu.M.; BELOSHAPKIN, D.K.; KOROVINA, A.N.; MOISEYEV, P.P.; GASHEV, B.M.; YEZHOV, L.S.; MANNHOK, A.I.; ROGOV, V.V.; GORYUNOV, V.P., red.; INOZEMTSEV, N.N., red.; SHLENSKAYA, V.A., red. izd-va; BORISOVA, L.M., red. izd-va; VOLKOVA, Ye.D., tekhn. red.

[Foreign commerce of the U.S.S.R. with countries of Asia, Africa and Latin America] Vneshniaia torgovlia SSSR so stranami Azii, Afriki i Latinskoi Ameriki. Moskva, Vneshtorgizdat, 1958. 194 p. (MIRA 11:7)

1. Moscow. Nauchno-issledovatel'skiy kon"yunkturnyy institut. (Russia--Commerce)

KOROVINA, A.S.; SERGEYEVA, N.I.; YEFIMOV, N.I.

Properties of the diagonal article 2212 manufactured with the use of spun nylon fibers. Izv. vys. ucheb. zav.; tekh. tekst. prom. no.4:13-15 '64. (MIRA 17:12)

1. Leningradskiy institut sovetskoy torgovli, kombinat tonkikh i tekhnicheskikh sukon im. Tel'mana.

KOROVINA, B.Ya.

Prognosis of methane content in the mines of Vorkuta deposit. Ugol' 36 no.2:34-37 F '61. (MIRA 14:2)

1. Pechorskiy nauchno-issledovatel'skiy ugol'nyy institut.
(Pechora Basin--Mine gases)

SHUTSKAYA, Ye.K.; BOYARINOVA, L.A.; KOROVINA, G.M.; MOKSYAKOVA, A.M.

Stratigraphic diagram of the Danian stage, the Paleogene, and the Lower Miocene of the western part of Central Asia. Geol. nefti i gaza 7 no.12:44-47 D '63. (MIRA 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut, Moskva.

ENTELIS, S.G.; KOROVINA, G.V.; CHIRKOV, N.M.

Thermodynamic activity of water in the system $H_2O - H_2SO_4 - i\text{-}C_3H_7OH$
Izv.AN SSSR.Otd.khim.nauk no.12:2252-2254 D '60.
(MIRA 13:12)

1. Institut khimicheskoy fiziki AN SSSR.
(Activity theory) (Sulfuric acid) (Isopropyl alcohol)

KOROVINA, G. V., Cand Chem Sci, "Kinetics and thermo-dynamics of the interaction between propylene and hydrated sulfuric acid." Moscow, 1960. (Min of Higher and Sec Spec Ed, Moscow Inst of Fine Chem Technol im M. V. Lomonosov). (KL, 3-61, 201).

18(3) PHASE I BOOK EXPLOITATION SOV/2337

Korovina, Glafira Vasil'yevna

Litaya grafitizirovannaya stal' (Graphitic Cast Steel) Moscow, Mashgiz, 1959. 38 p. (Series: Obmen tekhnicheskim opytom) 4,500 copies printed.

Reviewer: G.L. Kuruklis, Engineer; Ed.: B.P. Zakharov; Exec. Ed. (UralSibirian Division, Mashgiz): A.V. Kaletina, Engineer; Tech. Ed.: N.A. Dugina.

PURPOSE: This booklet is intended for workers at machine-building and metallurgical plants and for personnel at research institutes.

COVERAGE: The author discusses the application of graphitic steel in Soviet industry- specifically, at the Chelyabinskiy traktornyy zavod (Chelyabinsk Tractor Plant)- as a structural material and as a material for the manufacture of various types of tools (the aim being to avoid using more expensive steels and alloys wherever possible). Results of investigations of the mechanical

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and casting properties of graphitic steel are given. Methods of producing, casting, and heat-treating the steel are described. It is stated that the Chelyabinsk Tractor Plant is at present engaged in the production of graphitic steel for the casting of cold-stamping dies, metal-cutting and forging tools, and certain machine parts. No personalities are mentioned. There are 14 references, all Soviet.

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Application of Graphitic Cast Steel at the Chelyabinsk Tractor Plant 29

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Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 75 (USSR) SOV/137-58-12-24488

AUTHORS: Raytses, V. B., Korovina, G. V.

TITLE: Extending the Service Life of Hammer Dies (Povysheniye stoykosti molotovykh shtampov)

PERIODICAL: Sb. statey Chelyab. politekhn. in-t, 1958, Vol 8, pp 85-93

ABSTRACT: A study of the question of operation of hammer dies (D) leads to the following conclusions: 1. The hardness (H) of the D exercises a significant influence upon service life. Excessive H leads to cracks, whereas inadequate H results in increased wear. Optimum H of the D studied lies in the range d_{opt}=3.1-3.3 mm. 2. The use of Nr 18KhNVA steel (St) for inserts permits achievement of a favorable combination of high H and a_k [resilience], making for longer life than with inserts of Nr 5KhNM St. 3. Further increase in H by nitriding and in toughness by calorizing does not result in any improvement in D life. 4. Calorizing prevents formation of erosion cracks, and may therefore be recommended for D for hot-stamping presses working under conditions of relatively steady load.

Ye. L.

Card 1/1

KOROVINA, G.V.

137-58-5-10736

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 266 (USSR)

AUTHOR: Korovina, G. V.

TITLE: The Graphitizing of Steel and Prospective Employment Thereof (Grafitizirovannaya stal' i perspektivy yeye primeneniya)

PERIODICAL: V sb.: Materialy nauchno-tekhn. konferentsii rabotnikov zavodsk. laboratoriy. Rostov-na-Donu, 1957, pp 83-106

ABSTRACT: An investigation is made of graphitized cast steel (ST) of two grades, having the following compositions (%): LGS with 1.25-1.45 C, 1.0-1.35 Si, 0.3-0.5 Mn, 0.04 S, 0.03 P and LGSM of the same composition, but with 0.2-0.4 Cu added. A study is made of the processes of graphitization, quenching, and tempering, and of the hardenability of ST. Shop tests showed that the durability of cold-forming dies of ST is higher than that of U10, 7Kh3, and Kh12M steels. The rims of granulators subject to abrasive wear show superior properties when made of ST than do cyanided rims of St 45 steel, and shot-peening nozzles made of ST proved to be 2.5 times as durable. It is established that ST guarantees complete absence of free C in castings. Graphitizing anneal of ST at 950-1000°C for 3-5 hours assures

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137-58-5-10736

The Graphitizing of Steel and Prospective Employment Thereof

complete elimination of free Fe_3C. The final heat treatment of ST should consist of quenching from 830-850° (1.5-3 hours) in oil or water depending upon cross section, and tempering at 175-350° depending upon the degree of hardness required. The hardenability of ST is considerably higher than that of carbon tool ST. Bibliography: 13 references. Also see RzhMet, 1957, Nr 11, abstract 22419.

P.V.

1. Steel--Production 2. Graphite--Applications

Card 2/2

ENTELIS, S.G.; KOROVINA, G.V.; CHERKOV, N.M.

Acidity function of solutions of propylene in aqueous sulfuric acid. Izv. AN SSSR.Otd. khim. nauk no.11:2050-2052 N '60.
(MIRA 13:11)

1. Institut khimicheskoy fiziki AN SSSR.
(Propene) (Sulfuric acid)

ENTELIS, S.G.; KOROVINA, G.V.; CHIRKOV, N.M.

Thermodynamics of the absorption of propylene by the system H_2SO_4 - H_2O. Dokl. AN SSSR 134 no.4:856-859 O '60.
(MIRA 13:9)

1. Institut khimicheskoy fiziki Akademii nauk SSSR. Predstavleno akad. V.N.Kondrat'yevym.

(Propene) (Sulfuric acid)

KAZANSKIY, K. S.; KOROVINA, G. V.; VAYNSHTOK, B. I.; ENTELIS, S. G.

Polymerization of ethylene oxide on strontium carbonate and the effect of water adsorption on catalytic activity. Izv AN SSSR Ser Khim no. 4:759-761 Ap '64. (MIRA 17:5)

1. Institut khimicheskoy fiziki AN SSSR.

5(4) SOV/2o-121-6-24/45

AUTHORS: Korovina, G. V., Entelis, S. G., Chirkov, N. M.

TITLE: The Velocity of the Absorption of Ethylene and Propylene by Sulfuric Acid of Various Concentrations (Skorost' poglo-shcheniya etilena i propilena sernoy kislotoy raznykh kontsentratsiy)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 6, pp 1o38-1o4o (USSR)

ABSTRACT: In the first part of this paper, the authors discuss some previous papers dealing with this subject. The real kinetics of the absorption of propylene and ethylene by sulfuric acid were investigated at 70° by means of a circulation apparatus which was described in one of the authors' previous papers (Ref 3). In the course of the experiment, gas pressure remained constantly equal to atmospheric pressure. The velocity of the absorption was measured by determining the decrease of the gas quantity in the gas burette. If only the initial kinetic curve of the absorption (with respect to the gross weight) is taken into consideration (in disregard of reversibility), the equation $dA\ v/dt = k'P$ may be used for the

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The Velocity of the Absorption of Ethylene and Propylene by Sulfuric Acid of Various Concentrations

calculations. Δv denotes the variation of the volume of the gaseous phase reduced to standard conditions, and P - the pressure of the gas in the system. For k', the equation $k' = 22,4.10^3 kqv_k$ is given. A table contains the data of the experiments concerning the absorption of propylene and ethylene by sulfuric acid of various concentrations. According to these results, there is a linear relation between the logarithm of the constant of the absorption velocity of the olefine and the function of the acidity of the medium: $lg\ k = -1,1\ H_0 - 7,77$ for ethylene and $lg\ k = -0,97\ H_0 - 3,24$ for propylene. In the process of alcohol formation and alkylation (which are the elements of the absorption of the olefines by the acid) the limiting stage is preceded by the same process of olefine protonization. The proportionality between the observed constant and the acidity shows that the particle of the sulfuric acid is not contained in the activated complex and that the formation of the alkyl acid belongs to the first order. Finally, an expression for the

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SOV/20-121-6-24/45

The Velocity of the Absorption of Ethylene and Propylene by Sulfuric Acid of Various Concentrations

velocity of the alkylation reaction is given and explained. There are 1 figure, 1 table, and 8 references, 5 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, AS USSR)

PRESENTED: April 24, 1958, by V. N. Kondrat'yev, Academician

SUBMITTED: April 22, 1958

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AUTHORS: Entelis, S. G., Petrakovich, V. Ye., Korovina, G.V., 20-114-4-46/63
Chirkov, N. M.

TITLE: The Kinetics of the Formation of Alcohol and Alkyl Acid in the Reaction of Propylene With a Water Solution of Sulphuric Acid. (Kinetika obrazovaniya spirta i alkilkisloty pri reaktsii propilena s vodnoy sernoy kislotoy)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 848-851 (USSR)

ABSTRACT: A number of papers was devoted to the investigation of the absorption kinetics of olefines by sulphuric acid. The majority of the works, that of Rustamov excepted, have a common fundamental deficiency: they were performed under conditions in which the absorption velocity is limited by diffusionprocesses. The authors studied the absorption kinetics of propylene by 67%-sulphuric acid at 42-90°C and an initial pressure of ~800 torr. The complicated acid-catalytic processes of propylene in sulphuric acid may be described roughly for the dissolution as three reversible reactions:

I. Formation of alkyl acid: $C_3H_6 \underset{K_2}{\overset{K_1}{\rightleftharpoons}} u\text{-}C_3H_7SO_4H$.

II. Direct Formation of alcohol: u-C H + H O $\underset{K_4}{\overset{K_3}{\rightleftharpoons}}$ $u\text{-}C_3H_7OH$.

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The Kinetics of the Formation of Alcohol and Alkyl Acid in the Reaction of Propylene With a Water Solution of Sulphuric Acid. 2o-114-4-46/63

III. Saponification of the alkyl acid: $u\text{-}C_3H_7SO_4U + H_2O \underset{K_6}{\overset{K_5}{\rightleftharpoons}} u\text{-}C_3H_7OH + H_2SO_4$. In publications it has hitherto not been recorded whether the chief amount of alcohol is obtained by II. or III. However, the fact of a parallel accumulation of alcohol itself excludes reaction III. The experimental curves obtained are compared with the theoretical ones. Two cases were assumed: 1. no saponification of the alkyl acid occurs, 2. alcohol forms parallel to $u\text{-}C_3H_7SO_4H$ as well as by saponification of the latter. From the described short analysis it may be concluded that the chief, if not the total, amount of alcohol does not result from saponification of $u\text{-}C_3H_7SO_4H$, but develops parallel with it during the C_3H_6 reaction in water. There are 4 figures, 2 tables, and 8 references, 5 of which are Slavic.

ASSOCIATION: Institute for Chemical Physics of the AS USSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

PRESENTED: January 19, 1957 by V. N. Kondrat'yev, Member, Academy of

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The Kinetics of the Formation of Alcohol and Alkyl Acid in the Reaction of Propylene With a Water Solution of Sulphuric Acid 2o-114-4-46/63

Sciences, USSR

SUBMITTED: January 16, 1957

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SOV/81-59-21-73842

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 21, p 18 (USSR)

AUTHORS: Korovina, I.A., Lipis, L.V., Fomin, V.V.

TITLE: On the Ultraviolet Absorption Spectra of Plutonium Compounds

PERIODICAL: Fiz. sb. L'vovsk. un-t, 1958, Nr 4(9), pp 175 - 180

ABSTRACT: The absorption spectra of Pu solutions in 2 n $HClO_4$ (in the presence of 0.3 n HCl) have been investigated in the near ultraviolet region. It has been found that in the spectra of Pu(3+) solutions the absorption maxima are located around 216 and 236 mμ, Pu(4+) around 213 mμ and Pu(6+) around 210 mμ. The absorption coefficient of these bands is 20 - 40 times higher than the absorption coefficient of Pu bands in the region of longer wavelengths; besides that, these bands are distinguished by a considerably larger half-width. Their location and intensity depend very strongly on the conditions of the outer medium. This peculiarity is used for determination of the constant of the reaction $Pu^{4+} + HC_2O_4^- \rightleftarrows$

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